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Applicant(s): Jeffrey Remillard et al. Confirmation No.: 9752

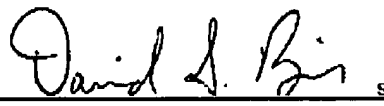
Serial No: 10/065,576

Group Art Unit: 2857

Filed: 10/31/2002

Examiner: Tsai, Carol SW

Title: SYSTEM AND METHOD FOR DETECTING AN OBJECT USING PULSED  
LIGHT

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<u>December 5, 2005</u>	
Date	David S. Bir (Reg. No. 38,383)

Commissioner for Patents  
P.O. Box 1450  
Arlington, VA 22313-1450**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Sir:

In response to the Final Office Action mailed September 22, 2005, Applicants hereby request review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal. The review is requested for the reasons stated on the attached sheets.

- 1 -  
(10/065,576)

**Reason(s) For Requesting Pre-Appeal Brief Review**

This application has been pending for over 3 years with the first substantive Office Action mailed 01/07/2004. Although claims have been added during prosecution, the originally filed claims (1, 2, 5, 6, 11, 13, 15-17) have remained unchanged while the references and arguments relied upon by the Examiner in rejecting the claims under 35 USC §102(b) for anticipation have evolved over the course of 4 additional Office Actions and a previously filed Appeal Brief that prompted re-opening of prosecution, only to end in a second final rejection and a second Notice of Appeal filed herewith. For the reasons below, Applicants request a Pre-(2<sup>nd</sup>) Appeal Brief Review of the propriety of the rejection.

Claims 1, 2, 5, 6, 11, 13, and 15-26 remain pending in this application with claims 24-26 being objected to as being dependent on a rejected base claim, but otherwise allowable. The remaining claims remain rejected under 35 USC §§102(b), 103(a).

**Does US 5,388,048 that discloses "by selecting suitable values for the first and second resistors 67 and 67', respectively, the sensitivity of the rangefinder receiver may be increased or decreased" anticipate Applicants' claims of adjusting sensitivity based on elapsed time from emission?**

Applicants' position has remain unchanged and was again stated in response to the penultimate Office Action as follows: As described in the specification and recited in independent claims 1, 11, 13, and 18-20, Applicants' invention includes systems and methods for detecting an object that emit one or more light pulses, receive a reflection of the emitted pulse(es) and adjust sensitivity based on the elapsed time after emission or elapsed time between emission of the pulse(es) and receiving of the reflection(s). By adjusting the sensitivity as disclosed and claimed, Applicants' invention can detect objects at relatively large distances while also detecting objects through fog. As with the reference (US 5,485,155 to Hibino) applied in the first Office Actions and described in detail in Applicants' first Appeal Brief that prompted re-opening of prosecution, the most recently applied reference (US 5,388,048 to Yavnayi et al.) does not disclose or suggest adjusting sensitivity based on elapsed time from said emission as disclosed and claimed by Applicants. Furthermore, as described in greater detail herein, Yavnayi '048 does not

disclose or suggest multiplying the received signal by a gain that increases based on elapsed time from emission as disclosed and claimed by Applicants.

Yavnayi '048 does not adjust sensitivity based on elapsed time from emission as disclosed and claimed by Applicants. In contrast, Yavnayi '048 uses elapsed time between receipt of subsequent pulses to calculate the self-speed of the vehicle and the collision time between two vehicles (Col. 5, l. 49 – Col 6, l.24). This is clearly different than adjusting sensitivity based on elapsed time from emission as claimed by Applicants and would not solve the problem of detecting relatively distant objects in addition to close objects while having acceptable performance in the presence of adverse environmental conditions including fog or dust, for example.

The Examiner is apparently relying on Col. 4, ll. 20-46 and Col. 7, ll. 7-41 of Yavnayi '048 as disclosing a sensitivity adjustment that anticipates Applicants' claimed invention. While Yavnayi illustrates a sensitivity selector that may be used to adjust sensitivity of the system for fog, the sensitivity selector (24) in Figure 1 is implemented by a switch (69) in combination with two resistors (67, 67') as shown and described in reference to Figure 6 (See Col. 1, ll.26-29 and Col. 7, ll.35-41). Yavnayi '048 describes operation of this sensitivity selector as:

"Thus, by selecting suitable values for the first and second resistors 67 and 67', respectively, the sensitivity of the rangefinder receiver may be increased or decreased. This is particularly useful for increasing the sensitivity of the device in adverse weather conditions, such as fog, when visibility is low so that detection of weak reflections over small distances may be effected." (Col 7, ll.35-41).

This is clearly different from Applicants' claimed invention, which dynamically adjusts sensitivity based on elapsed time from emission. There is no disclosure in the Yavnayi '048 reference of how or who determines when to adjust the sensitivity by selecting resistor 67 or 67'.

Yavnayi '048 teaches away from Applicants' invention by stating that "This is particularly useful for increasing the sensitivity of the device in adverse weather conditions, such as fog, when visibility is low so that detection of weak reflections over small distances may be effected." As such, Yavnayi '048 teaches increased sensitivity for fog. This is precisely the problem of various prior art systems described by Applicant in the Background section of the specification and solved by Applicants' claimed invention. The problem as described by Applicants':

"For example, in foggy road conditions, a large portion of transmitted light from a light transmitter would be reflected back toward a light detector proximate the transmitter. The amplitude of the signal generated by the light detector would be relatively high and could be greater than a constant threshold value (used for detecting objects at large distances from the vehicle). Thus, when the signal is greater than the constant threshold value due to fog, the known system would inadvertently indicate a solid object was detected.

\* \* \*

Thus, because the known system does not vary its detection sensitivity based on a distance (or elapsed travel time) of the light pulse, the system would be unable to detect objects at relatively large distances. Further, the known system would also falsely indicate detection of an object in fog conditions." (Applicant's Specification pp. 1-2)

This problem would be exacerbated, not solved, by a further increase in sensitivity in foggy conditions as taught by Yavnayi et al. '048.

While Yavnayi et al. '048 do teach a decreasing threshold or reference voltage generated by the RC circuit illustrated and described with reference to Figure 6, the circuit is based (reset) on receipt of subsequent pulses and not based on elapsed time of emission as disclosed and claimed by Applicants'. Furthermore, the circuit uses elapsed time between subsequent pulses to determine the distance or range of adjacent vehicles and not to adjust sensitivity of the system as disclosed and claimed by Applicants'. The only sensitivity adjustment is based on an undisclosed system/method for selecting one of the (fixed) value resistors 67 and 67'.

In summary, Yavnayi et al. does not disclose or suggest use of elapsed time from emission for anything. The elapsed time between receipt of subsequent pulses disclosed by Yavnayi et al. is used to determine distance between adjacent vehicles, not to adjust sensitivity of the system. The sensitivity adjustment of Yavnayi et al. is a switch to select between two fixed values and does not vary based on any elapsed time.

**Summary**

Applicants respectfully submit that the Examiner's position is clearly improper and without basis in that the current and previously relied upon prior art fails to disclose adjusting sensitivity based on elapsed time from emission as disclosed and claimed by Applicants.

No additional fee is believed to be due as the result of filing this request. However, please charge any fees for the filing of this paper to **Deposit Account 06-1510** (Ford Global Technologies, LLC). If there are insufficient funds in this account, please charge the fees to Deposit Account No.06-1505.

Respectfully submitted,



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Filed Under Rule 34(a)

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